Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Currently Amended) ~~A method for manufacturing a magnetic transducer according to claim 1, further comprising:~~ A method for manufacturing a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

a film forming step of selectively forming at least a magneto-sensitive layer on a predetermined substrate;

a substrate information obtaining step of obtaining information about at least either the substrate or a structure including at least the magneto-sensitive layer formed on the substrate, as substrate information before polishing;

a cutting step of cutting a base into a plurality of bars each bar in the plurality of bars including at least the magneto-sensitive layer; and

a polishing step of polishing the bars,

wherein the polishing step controls polishing of the bar based on at least the substrate information until the magneto-sensitive layer included in the bar reaches a predetermined target resistance value;

a step of calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the polishing step calculates the estimated resistance value by using at least the first value and controls polishing of the bar ~~so that~~until the estimated resistance value of the magneto-sensitive layer reaches the predetermined target resistance value.

3. (Currently Amended) A method for manufacturing a magnetic transducer according to claim ~~1~~ 2,

wherein the substrate information obtaining step obtains at least either a resistance value or sheet resistance value of the magneto-sensitive layer made on the substrate or a virtual resistance value of the magneto-sensitive layer containing a crowding resistance component as well,

whereby the substrate information contains data about at least either the obtained resistance value or sheet resistance value of the magneto-sensitive layer or the obtained virtual resistance value of the magneto-sensitive layer.

4. (Currently Amended) A method for manufacturing a magnetic transducer according to claim ~~1~~ 2,

wherein the film forming step further forms at least either a leading conductive film to be electrically connected to the magneto-sensitive layer or at least one resistance film pattern for functioning as a dummy, and

the substrate information obtaining step obtains the resistance value of at least either the leading conductive film or the resistance film pattern made on the substrate,

whereby the substrate information contains data about at least either the obtained resistance value of the leading conductive film or the obtained resistance value of the resistance film pattern.

5. (Currently Amended) A method for manufacturing a magnetic transducer according to claim ~~1~~ 2,

wherein the polishing step further obtains information about the bar under working as ongoing-work-information and controls polishing of the bar based on both of the substrate information and the information during working ~~so that the~~until a resistance of the magneto-sensitive layer included in the bar ~~has~~ reaches a predetermined target resistance value.

6. (Currently Amended) A method for manufacturing a magnetic transducer according to claim 5, further comprising:

a step of calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the polishing step calculates the estimated resistance value by using both of the first value and the ongoing-work-information and controls polishing of the bar ~~piece so that~~until the estimated resistance value reaches the target resistance value.

7. (Currently Amended) A method for manufacturing a magnetic transducer according to claim 6, further comprising:

a step of calculating a second value constituting a part of the estimated resistance value by subjecting the ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the polishing step calculates the estimated resistance value by using both of the first value and the second value and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

8. (Original) A method for manufacturing a magnetic transducer according to claim 5,

wherein the substrate information obtaining step obtains at least either a resistance value or sheet resistance value of the magneto-sensitive layer made on the substrate or a virtual resistance value of the magneto-sensitive layer containing a crowding resistance component as well,

whereby the substrate information contains data about at least either the obtained resistance value or sheet resistance value of the magneto-sensitive layer or the obtained virtual resistance value of the magneto-sensitive layer.

9. (Original) A method for manufacturing a magnetic transducer according to claim 5,

wherein the film forming step further forms at least either a leading conductive film to be electrically connected to the magneto-sensitive layer or at least one resistance film pattern for functioning as a dummy, and

the substrate information obtaining step obtains the resistance value of at least either the leading conductive film or the resistance film pattern made on the base,

whereby the substrate information contains data about at least either the obtained resistance value of the leading conductive film or the obtained resistance value of the resistance film pattern.

10. (Currently Amended) A method for manufacturing a magnetic transducer according to claim 9,

wherein the polishing step further obtains the resistance value of the resistance film pattern on the ~~bar-piece,~~bar,

whereby the ongoing-work-information further contains data about the obtained resistance value of the resistance film pattern.

11. (Original) A method for manufacturing a magnetic transducer according to claim 5,

wherein the polishing step further obtains a dimension value of a predetermined portion of the magneto-sensitive layer on the bar,

whereby the ongoing-work-information contains data about the obtained dimension value.

12. (Currently Amended) A method for manufacturing a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

a film forming step of selectively forming at least a magneto-sensitive layer on a predetermined substrate;

a cutting step of cutting the substrate into a plurality of ~~bars each~~bars, each bar including at least the magneto-sensitive layer; and

a polishing step of polishing the plurality of bars,

wherein the polishing step includes

obtaining information about ~~the~~ a bar under working as ongoing-work-information;

calculating a ~~second~~ resistance value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the obtained ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients; and

calculating the estimated resistance value by using at least the ~~second~~ resistance value and controlling polishing of the bar ~~so that~~until the estimated resistance value reaches ~~the~~ a target resistance value.

13. (Currently Amended) A method for manufacturing a magnetic transducer according to claim 12,

wherein the polishing step obtains a dimension value of a predetermined portion of the magneto-sensitive layer on ~~the~~ a bar piece under working,

whereby the ongoing-work-information contains data about the obtained dimension value.

14. (Original) A method for manufacturing a magnetic transducer according to claim 12,

wherein the film forming step further forms on the substrate at least one resistance film pattern for functioning as a dummy, and

the polishing step obtains the resistance value of the resistance film pattern,

whereby the ongoing-work-information further contains data about the resistance value of the resistance film pattern.

15. (Canceled)

16. (Currently Amended) ~~An apparatus for manufacturing a magnetic transducer according to claim 15~~, An apparatus for manufacturing a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

substrate information obtaining means for obtaining information about at least either a predetermined substrate or a structure including at least a magneto-sensitive layer selectively formed on the substrate, as substrate information before polishing;

polishing means for polishing each bar of a plurality of bars which the substrate is cut into, each including at least the magneto-sensitive layer; and

polishing control means for controlling the polishing means based on at least the substrate information until the magneto-sensitive layer included in the bar reaches a predetermined target resistance value;

wherein the polishing control means calculates a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients, calculates the estimated resistance value by using at least the first value, and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

17. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim ~~15~~ 16,

wherein the substrate information obtaining means obtains at least either a resistance value or sheet resistance value of the magneto-sensitive layer made on the substrate or a virtual resistance value of the magneto-sensitive layer containing a crowding resistance component as well,

whereby the substrate information contains data about at least either the obtained resistance value or sheet resistance value of the magneto-sensitive layer or the obtained virtual resistance value of the magneto-sensitive layer.

18. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim ~~15~~ 16,

wherein the substrate information obtaining means obtains the resistance value of at least either a leading conductive film formed so as to be electrically connected to the magneto-sensitive layer or a resistance film pattern formed as a dummy,

whereby the substrate information contains data about at least either the obtained resistance value of the leading conductive film or the obtained resistance value of the resistance film pattern.

19. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim ~~15~~ 16, further comprising:

ongoing-work-information obtaining means for obtaining information about the bar under working as ongoing-work-information,

wherein the polishing control means controls polishing of the bar based on both of the substrate information and the ongoing-work-information ~~so that~~until the magneto-sensitive layer included in the bar ~~has~~ reaches a predetermined target resistance value.

20. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim 19, wherein the polishing control means calculates a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients, calculates the estimated resistance value by using both of the first value and the ongoing-work-information, and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

21. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim 20, wherein the polishing control means further calculates a second value constituting a part of the estimated resistance value by subjecting the ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients, calculates the estimated resistance value by using both of the first value and the second value, and controls polishing of the bar ~~so that~~until the estimated resistance value of the magneto-sensitive layer reaches the target resistance value.

22. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim 19,

wherein the substrate information obtaining means obtains at least either a resistance value or sheet resistance value of the magneto-sensitive layer made on the substrate

or a virtual resistance value of the magneto-sensitive layer containing a crowding resistance component as well,

whereby the ~~base~~ substrate information contains data about at least either the obtained resistance value or sheet resistance value of the magneto-sensitive layer or the obtained virtual resistance value of the magneto-sensitive layer.

23. (Currently Amended) An apparatus for manufacturing a magnetic transducer according to claim 19,

wherein the ~~base~~ substrate information obtaining means obtains the resistance value of at least either a leading conductive film formed so as to be electrically connected to the magneto-sensitive layer or a resistance film pattern formed as a dummy,

whereby the substrate information contains data about at least either the obtained resistance value of the leading conductive film or the obtained resistance value of the resistance film pattern.

24. (Original) An apparatus for manufacturing a magnetic transducer according to claim 23,

wherein the polishing control means further obtains the resistance value of the resistance film pattern on the bar,

whereby the ongoing-work-information further contains data about the obtained resistance value of the resistance film pattern.

25. (Original) An apparatus for manufacturing a magnetic transducer according to claim 19,

wherein the polishing control means further obtains a dimension value of a predetermined portion of the magneto-sensitive layer on the bar,

whereby the ongoing-work-information contains data about the obtained dimension value.

26. (Currently Amended) An apparatus for manufacturing a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

cutting means for cutting a substrate, on which at least a magneto-sensitive layer is selectively formed, into a plurality of bars each including at least the magneto-sensitive layer;

polishing means for polishing the bars, and

ongoing-work-information obtaining means for obtaining information about ~~the~~ a bar under working as ongoing-work-information,

polishing control means for calculating a ~~second~~ resistance value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the obtained ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients, calculating the estimated resistance value by using at least the ~~second~~ resistance value, and controlling polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

27. (Original) An apparatus for manufacturing a magnetic transducer according to claim 26,

wherein the polishing control means obtains a dimension value of a predetermined portion of the magneto-sensitive layer on the bar under working,

whereby the ongoing-work-information contains data about the obtained dimension value.

28. (Original) An apparatus for manufacturing a magnetic transducer according to claim 26,

wherein the polishing control means obtains the resistance value of the at least one resistance film pattern formed as a dummy on the substrate,

whereby the ongoing-work-information further contains data about the resistance value of the resistance film pattern.

29. (Original) A method for manufacturing a magnetic head comprising a magnetic transducer for reproducing information having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising the steps of:

forming polished bars each including a plurality of magnetic transducers by a manufacturing method according to claim ~~1~~2; and

cutting the bar into a plurality of head sliders each including at least one magnetic transducer.

30. (Currently Amended) An apparatus for manufacturing a magnetic head comprising a magnetic transducer for reproducing information having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

an apparatus for manufacturing a magnetic transducer according to claim ~~15~~ 16; and

a cutting apparatus for cutting each of polished bars formed by the apparatus for manufacturing a magnetic transducer, into a plurality of head sliders each including at least one magnetic transducer.

31. (Canceled)

32. (Currently Amended) ~~Software for controlling manufacturing of a magnetic transducer according to claim 31, further comprising:~~ Software for controlling manufacturing of a magnetic transducer, for use in manufacturing of a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

a step of obtaining information about at least either a predetermined substrate supporting the magneto-sensitive layer or a structure including at least the magneto-sensitive layer formed on the substrate, as substrate information before polishing; and

a control step of controlling polishing each bar of a plurality of bars which the substrate is cut into, each including at least the magneto-sensitive layer,

wherein the control step controls polishing of the bar based on at least the substrate information until the magneto-sensitive layer included in the bar reaches predetermined target resistance value;

a step of calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients; and

a step of calculating the estimated resistance value by using at least the first value,

wherein the control step controls polishing of the bar ~~so that~~until the obtained estimated resistance value reaches the target resistance value.

33. (Currently Amended) Software for controlling manufacturing of a magnetic transducer according to claim ~~31~~ 32, further comprising:

a step of obtaining information about the bar under polishing as information during working,

wherein the control step controls polishing of the bar based on both of the substrate information and the ongoing-work-information.

34. (Currently Amended) Software for controlling manufacturing of a magnetic transducer according to claim 33, further comprising:

a step of calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control step calculates the estimated resistance value by using both of the first value and the ongoing-work-information and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

35. (Currently Amended) Software for controlling manufacturing of a magnetic transducer according to claim 34, further comprising:

a step of calculating a second value constituting a part of the estimated resistance value by subjecting the ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control step calculates the estimated resistance value by using both of the first value and the second value and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

36. (Currently Amended) Software for controlling manufacturing of a magnetic transducer, for use in manufacturing of a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

a control step of controlling polishing of a plurality of bars which is a predetermined substrate supporting the magneto-sensitive layer is cut into, each including at least the magneto-sensitive layer;

a step of obtaining information about ~~the~~ a bar under polishing as ongoing-work-information; and

a step of calculating a ~~second~~ resistance value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the obtained ongoing-

work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control step calculates the estimated resistance value by using at least the ~~second~~ resistance value and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

37-40. (Canceled)

41. (Currently Amended) ~~A system for controlling manufacturing of a magnetic transducer according to claim 40, further comprising:~~

A system for controlling manufacturing of a magnetic transducer, for use in manufacturing of a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

means for obtaining information about at least either a predetermined substrate supporting the magneto-sensitive layer or a structure including at least the magneto-sensitive layer formed on the substrate, as substrate information before polishing; and

control means for controlling polishing of a plurality of bars which the substrate is cut into, each bar of the plurality of bars including at least the magneto-sensitive layer,

wherein the control means controls polishing of the bar based on at least the substrate information until the magneto-sensitive layer included in the bar reaches a predetermined target resistance value;

means for calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients; and

means for calculating the estimated resistance value by using at least the first value,

wherein the control means controls polishing of the bar ~~so that~~until the obtained estimated resistance value reaches the target resistance value.

42. (Currently Amended) A system for controlling manufacturing of a magnetic transducer according to claim ~~40~~ 41, further comprising:

means for obtaining information about the bar under polishing as ongoing-work-information,

wherein the control means controls polishing of the bar based on both of the substrate information and the ongoing-work-information.

43. (Currently Amended) A system for controlling manufacturing of a magnetic transducer according to claim 42, further comprising:

means for calculating a first value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the substrate information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control means calculates the estimated resistance value by using both of the first value and the ongoing-work-information and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

44. (Currently Amended) A system for controlling manufacturing of a magnetic transducer according to claim 43, further comprising:

means for calculating a second value constituting a part of the estimated resistance value by subjecting the ongoing-work-information to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control means calculates the estimated resistance value by using both of the first value and the second value and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

45. (Currently Amended) A system for controlling manufacturing of a magnetic transducer, for use in manufacturing of a magnetic transducer having a magneto-sensitive layer changing in electrical resistance in response to an external magnetic field, comprising:

control means for controlling polishing of a plurality of bars which a predetermined substrate supporting the magneto-sensitive layer is cut into, each including at least the magneto-sensitive layer;

means for obtaining information about ~~the~~ a bar under polishing as ongoing-work-information; and

means for calculating a ~~second~~ resistance value constituting a part of a potential estimated resistance value of the magneto-sensitive layer by subjecting the obtained information during working to a predetermined operation using values previously subjected to statistical processing as weighting coefficients,

wherein the control means calculates the estimated resistance value by using at least the ~~second~~ resistance value and controls polishing of the bar ~~so that~~until the estimated resistance value reaches the target resistance value.

46-54. (Canceled)